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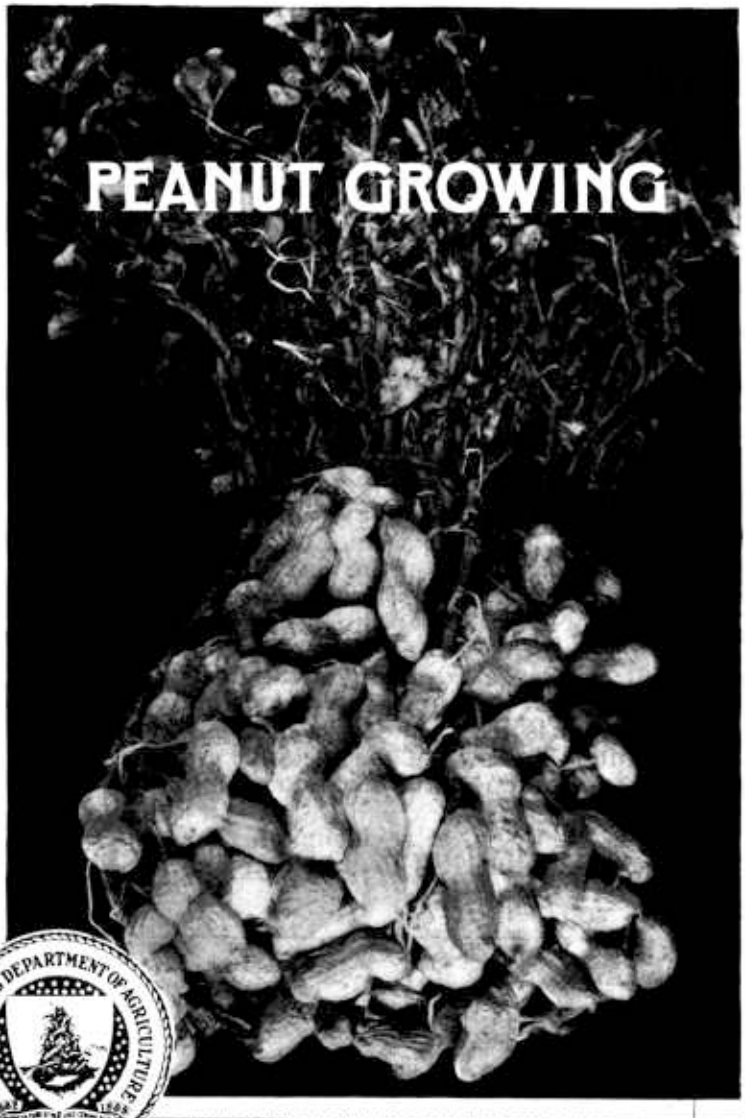

PEANUTS are an important farm crop throughout the greater part of the Southeastern States. The peanut is a native of the Tropics and was introduced into North America during the early colonization period, but its use has increased very greatly during recent years.

Peanuts should be grown in a definite rotation, including at least two soil-improvement crops, such as cowpeas, velvetbeans, soybeans, bur clover, crimson clover, vetch, or any crop that will add organic matter to the soil. Peanuts should not be planted on the same land oftener than once in three or four years.

Experimental results show that the kind and quantity of commercial fertilizer that may be profitably used for peanuts depend almost entirely on the fertility and character of the soil. Tests in Virginia have shown that large quantities of nitrogen used on a fairly fertile soil always produce a poor quality of peanuts without materially increasing the yield. On thin, sandy soils and those not in a good state of fertility 300 to 500 pounds per acre of a complete fertilizer may, as a rule, be used to advantage.

Results obtained from the use of lime on peanuts by various investigators indicate that the quality of the peanuts is affected much more than the quantity. Peanuts grown on soils containing the proper amount of lime are usually better filled, the shells are whiter, and they have greater weight per bushel.

Good seed is the foundation of a profitable crop of peanuts. The size of the peanut kernels depends largely on inherent qualities and not upon occasional large seeds.

This bulletin is a revision of and supersedes Farmers' Bulletin 1127, Peanut Growing for Profit.

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PEANUT GROWING

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CONTENTS

PEANUTS are an important money crop in no less than nine of the Southern States. The peanut is a native of the Tropics and was introduced into North America during the early days of colonization but did not become of commercial importance until about 1876. From that time until about the beginning of the twentieth century its importance as a farm crop was relatively small, but since then the production and uses of peanuts have increased enormously.

CONDITIONS NECESSARY FOR PEANUT GROWING

The peanut is a pea rather than a nut and belongs to the same group of plants as do beans and common garden peas, differing only in that it possesses the character of maturing its fruit, or pod, beneath the surface of the soil. The small yellow flowers are borne at the joints where the leaves are attached to the stems, and as soon as pollination takes place the flower fades and the "peg," as it is commonly called, elongates and goes into the soil, where the pod develops. Hence, it is essential that the crop be grown on soil where a loose surface can be maintained.

Peanuts will adapt themselves to a wider range of climate if soil conditions are favorable than almost any other southern crop. The climatic requirements of the peanut are a season of 100 to 140 days without frost, moderate rainfall during the growing period, an abundance of sunshine, and a relatively high temperature. Best

results are secured under conditions where the normal annual rainfall is from 42 to 54 inches. Peanuts are frequently grown under irrigation. However, fair yields have been made without irrigation where the annual rainfall is less than 19 inches. On the other hand, good crops have been produced on low bottom lands with 54 to 60 inches of rainfall.

Light sandy loam soil is best adapted to the production of peanuts for the market. Poorly drained or sour soils are not generally desirable. For hog feeding or as forage the crop may be grown on almost any type of soil except the black waxy and extremely heavy clays. Sandy loam soils that will produce good crops of beans and potatoes are considered suitable for growing peanuts.

The territory indicated on the dark portion of the map shown in Figure 1 is, for the most part, adapted to the production of peanuts. Outside of this area their cultivation is more or less uncertain, although in a few localities they may be grown successfully for stock feeding. The soil and climate conditions of southeastern Virginia and northeastern North Carolina seem to be especially adapted to the growing of the Jumbo, Virginia Bunch, and Virginia Runner varieties, which constitute the bulk of the large-podded peanuts appearing on our markets. Throughout the Gulf coast region, Oklahoma, and Arkansas the Spanish variety has proved satisfactory, but peanuts of the runner type are grown extensively in Alabama and Florida.

SELECTION AND PREPARATION OF THE SOIL

In selecting land for peanuts, two things must be considered: (1) The character and adaptability of the land and (2) the character of the crops planted or the rotation practiced during previous years. The peanut crop is subject to injury from crab grass and other weeds; therefore, it should follow some crop that has been kept clean. Cowpeas, velvetbeans, sweetpotatoes, and potatoes are good preparatory crops. Winter oats also are frequently followed by a late-planted crop of peanuts. Cornstalks or cotton stalks interfere greatly with the cultivation and harvesting and should be either removed or plowed under to a depth of at least 8 or 9 inches.

Peanuts should not be planted on the same land oftener than once in three or four years. The rotation should include at least two soil-building crops, one of which is a winter cover crop. Cowpeas, velvetbeans, or soybeans, planted either alone or with corn, are good soil builders. Winter cover crops include bur clover, crimson clover, giant red clover, alfalfa, vetch, rye, barley, purple-top turnips, and English cow-horn turnips.

In a rotation experiment conducted at the Virginia Truck Experiment Station, near Norfolk, the crop rotation consisted of corn with crimson clover as a winter cover crop during the first year, early potatoes followed by cowpeas the second year, and Spanish peanuts the third year, followed by rye as a winter cover crop. Alongside of the three plots handled in rotation is a similar plot on which peanuts are grown continuously. This experiment extended over a period of 10 years, and for the last 3 years the rotation plots yielded approximately three times the quantity of peanuts produced on the continuous plot.

Another rotation which gave good results at the Pee Dee Experiment Station, Florence, S. C., included peanuts the first year with a winter crop of oats and vetch following the peanuts. These were harvested for hay and the land devoted to cowpeas, which were also harvested for hay. A crop of sweetpotatoes the third year completed the rotation. The peanuts and sweetpotatoes were fertilized, but no fertilizer was used on the forage crops. Yields from the rotation area at the end of six years compared favorably with those from adjacent areas, indicating that a rotation of this character is possible.

If considerable rough material is to be turned under, fall or winter plowing should be practiced except on soils that wash badly. Buckshot or other heavy soils on which peanuts are grown for stock feeding are benefited if turned up to the action of frost during the winter months.

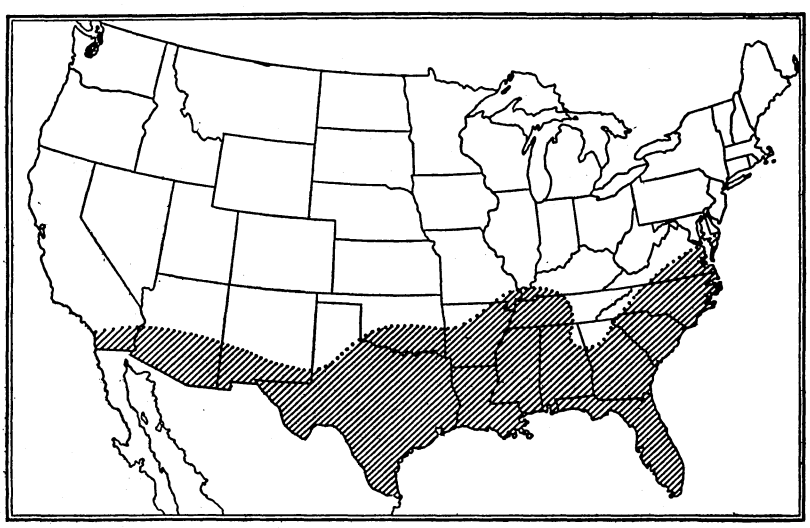

FIGURE 1.—Outline map of the United States, suggesting the possible area adapted to the production of peanuts

Thorough preparation of the land before planting is essential. The Virginia peanut grower, although his land is naturally mellow, plows every inch of space, then harrows and drags it at least three times, or until the soil is in the best possible condition. The subsequent cost of cultivation is thereby greatly reduced. The land should be plowed broadcast, preferably with a 2-horse turning plow, rather than bedded, as is often done for cotton or corn. With good seed and thorough preparation of the soil the Virginia farmer secures a good stand, without which a profitable crop can not be made.

FERTILIZERS

The kind and quantity of commercial fertilizer that may be profitably used for peanuts depends almost entirely on the fertility and character of the soil. Virginia Agricultural Experiment Station Bulletin 229, Experiments with Cotton and Peanuts and Crops Grown in Rotation with Them in Nansemond County, states:

Our experimental results show that large quantities of nitrogen used on a fairly fertile soil always produce a poor quality of peanuts. At the same time the yield is not materially increased. * * *

In order to fertilize peanuts judiciously it is necessary to study the condition of the particular soil and supply those elements which seem to be lacking. If the soil will produce a fair growth of vines, the use of nitrogen and potash can be eliminated. If the soil is light and sandy and lacking in organic matter a complete fertilizer will pay. A complete fertilizer analyzing 2 per cent nitrogen, 8 per cent phosphoric acid, and 4 per cent potash, with all the nitrogen from an organic source, is recommended for general use on thin, sandy soils. This may be used at rates varying from 300 pounds to 500 pounds to the acre, depending upon the fertility of the soil.

Acid phosphate at rates of application varying from 300 to 500 pounds to the acre to hasten maturity is the only fertilizer recommended for this crop on heavy, fertile soils.

The Alabama Agricultural Experiment Station in its Bulletin 193, Peanuts—Tests of Varieties and Fertilizers, advises the use of phosphoric acid for peanuts on practically all soils and potash under certain conditions. The results indicate but little benefit from nitrogen.

In southern Georgia and northern Florida practical growers strongly recommend a complete fertilizer, such as 3–9–5 or a 2–10–4 mixture, used at the rates of from 250 to 500 pounds per acre.

Experiments at the Pee Dee Experiment Station, South Carolina, with fertilizers in a 3-year rotation, including peanuts, forage crops, and sweetpotatoes, showed that there was comparatively little response to the use of fertilizer. Phosphorous and potash both gave some increase in yield, but nitrogen was without effect. It should be stated that this land was naturally fertile and that the green crops grown in the rotation kept the organic content of the soil at a high level. These results bear out the findings of other investigators to the effect that fertilizers have little influence on peanuts if the ground is naturally good. As a consequence, the use of commercial fertilizers is not so important where soil-building crops are grown in the rotation. However, if any doubt exists as to the need for fertilizer, an application of 200 to 400 pounds of a mixture of superphosphate and potash is recommended.

Commercial fertilizers are usually applied just before planting the peanuts. However, if applied three or four days in advance they will become better mixed with the soil. The fertilizer is usually applied directly in the row, using a 1-horse distributor. In other cases 1-row or 2-row planters with fertilizer attachments are used in order that the work can be done at one operation. Precautions should always be taken to mix the fertilizer with the soil so that large amounts of it will not come in contact with the seeds.

Peanuts require an abundance of organic matter in the soil, and this may be supplied either in the form of well-rotted manure or by means of soil-improving crops such as cowpeas, clovers, vetches, or any crop ordinarily used in the locality for improving the soil. Wherever manure is used, either it should be applied with some other crop in the rotation, or, if put on while fitting the land for peanuts, it should be thoroughly mixed with the soil. Because of the limited supply of manure available on the average farm, it can be used, as a rule, to better advantage on other crops than peanuts. Many growers believe that the use of manure causes an excessive development of vine growth and an increased number of "pops" or poorly filled pods.

Peanuts as ordinarily handled do not improve the soil, despite the fact that they have the power of collecting the free nitrogen of the atmosphere and storing it in nodules upon their roots. (Fig. 2.) If, in harvesting, the greater part of the roots are cut off and left in the ground, the drain on soil fertility should be reduced to a minimum. Because of the system of harvesting now followed, however, peanuts do not improve the soil as do the clovers, cowpeas, velvetbeans, soybeans, and alfalfa, the root systems of which are not removed from the ground.

LIME AND GYPSUM

Results obtained from the use of lime on peanuts by various investigators indicate that the quality of the peanuts is affected much more than the quantity. Peanuts grown on soil having sufficient lime are usually better filled, the shells are whiter, and they have a greater weight per bushel.

Work conducted by the Virginia Agricultural Experiment Station, at the branch station at Holland, Va., and reported in its Bulletin 229, indicated no benefit from the use of lime. Decreased yields were even obtained from the use of burned oyster shells at rates of 2 and 4 tons per acre.

In Bulletin 262 of the North Carolina Agricultural Experiment Station, Value of Lime on Norfolk Sandy Loam Soil, additional findings on the use of lime are given. This work was carried on at the Upper Coastal Plain Branch Station in Edgecombe County on a gray sandy to fine sandy loam soil which is representative of much of the coastal plains section of North Carolina. In practically all cases limestone with and without other elements decreased the yield of peanuts. The writers of that bulletin conclude that "peanuts grown in rotation are rarely benefited enough from applications of lime to justify its use on this type of soil."

The Alabama Agricultural Experiment Station reports, in Bulletin 193, the results of several tests with lime on peanuts and concludes "that slaked lime at the rate of 600 pounds per acre made a profitable increase when applied to sandy soil."

A lime application test was carried on at the Pee Dee Experiment Station during 1917, 1918, and 1919. The soil, Orangeburg sandy loam, had not been limed for 10 years. The results of this test are shown in Table 1.

TABLE 1.—*Effect of application of hydrated lime to Spanish peanuts at the Pee Dee Experiment Station, Florence, S. C., in 1917, 1918, and 1919*

[Plots one-tenth of an acre. The entire area received a uniform broadcast application of 500 pounds per acre of 2–8–3 fertilizer while the ground was being prepared]

Treatment	Lime per acre (pounds)	Acre yield in 30-pound bushels in—		
		1917	1918	1919
Lime harrowed in before planting	None.	20.1	21.6	35.5
	500	24.0	20.8	37.8
	1,000	21.0	22.0	39.0
	1,500	20.5	23.3	38.7
	2,000	24.0	22.1	40.3
Lime applied as top-dressing 8 weeks after planting	None.	32.1	30.8	33.5
	250	19.1	29.3	35.5
	500	13.8	27.1	33.8
	1,000	18.3	28.6	33.5
	2,000	21.8	------	34.6

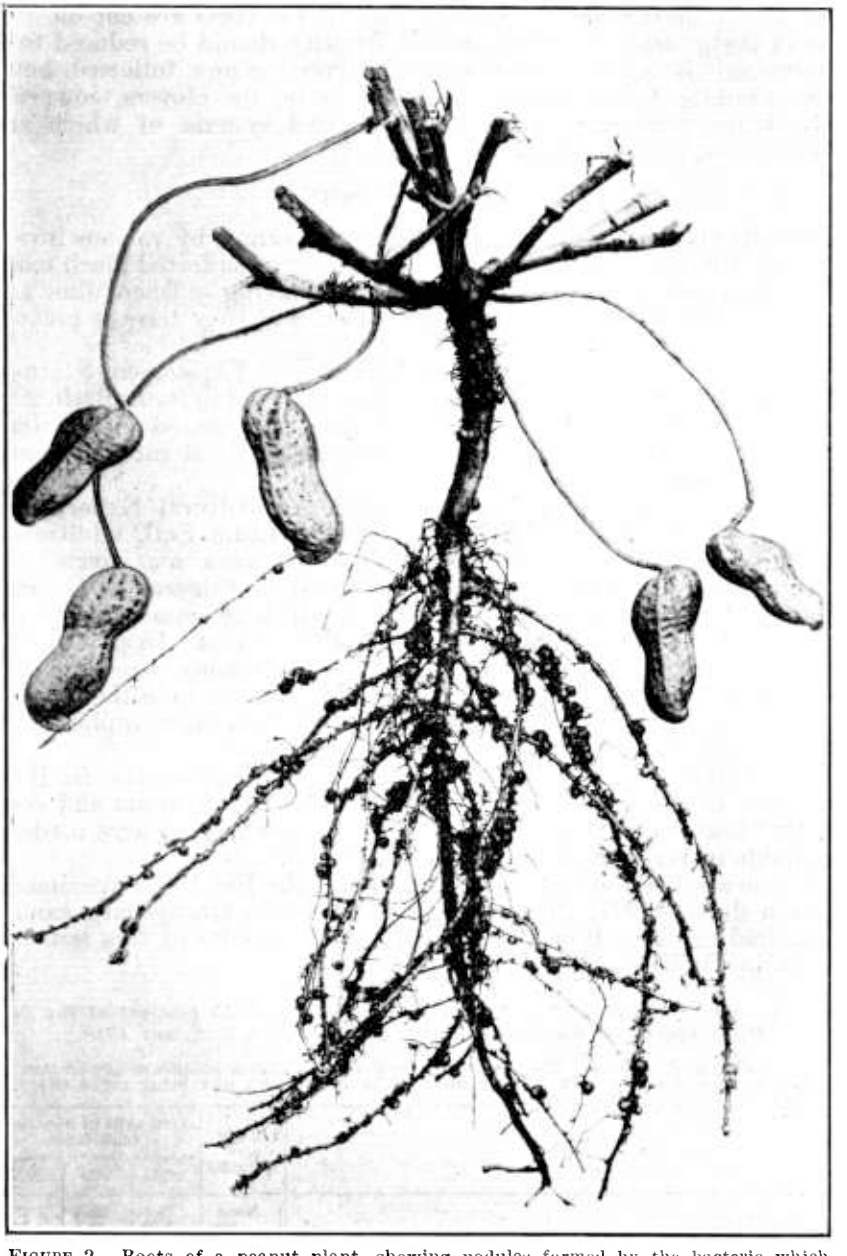

FIGURE 2.—Roots of a peanut plant, showing nodules formed by the bacteria which collect nitrogen

The nature of this test is such that definite conclusions can not be drawn, but the results indicate that lime had no marked effect on the yield. A slight depression of yield as the result of top-dressing with lime is indicated. Later work, still in progress, shows similar results.

These tests indicate that additional lime is not always needed by soils devoted to peanuts, but it would be a great mistake for any grower to conclude offhand that he should not use lime. It should also be borne in mind that the lime requirements of adjoining fields may differ and that the only safe method is to test the soil acidity, or, if it is thought that lime is needed, to make a moderate application of 500 to 600 pounds per acre.

Gypsum, like lime, is sometimes beneficial to peanuts, and is usually used at about the same rate as lime. During the last few years the North Carolina and Virginia Agricultural Experiment Station workers have come to the conclusion that the application of lime or gypsum is profitable on decidedly acid soils but is not profitable on slightly acid or on neutral soils. They have also concluded that if lime is used applications of gypsum are not profitable, but advise the use of gypsum when the peanuts are in bloom in case the soil is acid and no lime was applied before planting.

PEANUT SEED AND ITS CARE

SELECTION OF SEED

The size of the peanut kernels depends largely on inherent qualities and not upon occasional large seeds. It is of little use, therefore, to employ large-size seed screened out of miscellaneous lots without consideration of their hereditary lines. Many peanut growers have practiced seed improvement for years and have developed strains that are above the average in size and yielding qualities. Much good can be accomplished by locating these special stocks, whether in the hands of growers or of dealers, and using them for planting. Plant breeders are making renewed efforts to produce strains and varieties of peanuts that will yield a higher percentage of extra large kernels. Shellers and cleaners who have in their warehouses desirable seed material of strains that shell a high percentage of fancy kernels can do much to help the industry by making this material available for seed purposes. Growers of Virginia-type peanuts will find it to their advantage to substitute the large-type seed for the miscellaneous small stock which they would otherwise plant, as the substitution would undoubtedly result in a higher proportion of large kernels.

The corn and wheat crops of the country have been increased many millions of bushels through seed improvement, and the same opportunity exists with peanuts. The proper method of producing seed is to grow a special seed patch, the seed for which has been selected from vigorous, high-producing plants the previous year.

Peanuts intended for seed, after becoming fully mature, should be dug carefully during bright weather and placed in small stacks around poles as described under "Curing" (p. 16). After a curing period of at least four to six weeks the seed peanuts should be picked from the vines and stored. Under the most favorable curing conditions peanuts may be ready to pick in three weeks after digging.

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STORAGE OF SEED

Special care should be taken to protect peanut seed from damage by insects, mice, rats, squirrels, or other pests, and from unfavorable storage conditions. On the farm a cool, dry, well-ventilated place, such as the loft of a granary or corncrib, is well suited to peanut seed storage. Small quantities, up to a few bushels, may be stored in sacks hung from overhead supports or otherwise protected from mice, rats, and squirrels, or dry seed may be stored in metal cans provided with screen-covered openings for ventilation. A good storage for larger quantities of peanut seed may be provided by building a suitable-sized inclosure or room in a granary or corncrib, covering the floor, sides, and ceiling with ¼-inch wire mesh. A room of this kind will soon pay for itself in the seed saved. It may be sufficiently large to hold any portion of the crop, thereby making it possible to hold peanuts on the farm as long as may be desired without loss from animals.

Work carried on during the period from 1921 to 1926 at the Pee Dee Experiment Station, Florence, S. C., and in the cold-storage plant at Arlington Experiment Farm, Rosslyn, Va., shows that shelled or unshelled peanut seed may be kept in cold storage for several months without appreciable effect on its vitality. A summary of this work is given in Table 2. These findings are of importance because peanuts held in cold storage may be offered for use as seed.

TABLE 2.—*Germination and yield of shelled and unshelled peanut seed kept in cold storage*[1] *(32° and 40° F.) and at natural warehouse temperature, about 70° F., 1921 to 1926*

Variety	Temperature	Germination		Yield per plot (0.01 acre)	
		Shelled	Unshelled	Shelled	Unshelled
	° F.	*Per cent*	*Per cent*	*Pounds*	*Pounds*
Spanish	32	74.84	77.96	15.63	15.75
	40	71.14	75.94	12.63	16.00
	70	76.79	75.87	17.50	15.25
Improved Spanish	32	69.28	71.96	15.50	18.75
	40	65.39	71.09	15.17	16.00
	70	67.67	71.58	14.92	16.92
Virginia Bunch	32	46.08	68.73	8.08	13.75
	40	47.48	66.71	11.00	13.58
	70	49.58	72.11	7.75	17.17
Virginia Runner	32	56.52	73.67	8.75	14.25
	40	52.82	68.60	8.83	12.42
	70	54.57	69.28	10.58	12.75

[1] Cold-storage plant at the Arlington Experiment Farm.

AGE OF SEED

Tests made at the Pee Dee Experiment Station with peanut seed of different ages show that it may be kept for a period of four to five years without serious loss in germinating qualities or appreciable reduction in the size of the crop. Seed grown in the years 1921 to 1926 was planted every year from 1922 to 1927, inclusive. While the seed of both the Valencia and Improved Spanish varieties grown in 1921 and 1922 showed a reduction in germination in 1926 and 1927, the fact that it had been kept for four years without serious deterioration is sufficient for all practical purposes. It would be distinctly advantageous, however, to carry especially good peanut seed stocks

over a season or two to guard against failure to secure good new seed. Peanut seed kept over must be stored in a cool moderately dry, well-ventilated place and carefully fumigated twice each season with carbon disulphide to destroy insects. Seed stored from season to season should be unshelled.

PREPARATION FOR PLANTING

During the winter months when there is spare time the seed peanuts should be prepared for planting. The dirt, trash, and light pods should be removed. If a large quantity of seed is to be handled it may be run through the picker under a heavy fan blast. A fanning mill may also be used to separate the heavy, well-filled pods from the dirt and trash. In many cases it is possible to secure seed from commercial peanut cleaners who are willing to set aside high-producing lots for seed purposes. These concerns have equipment for cleaning peanuts at very low cost. After cleaning, the peanuts may be stored unshelled until planting time or they may be shelled. Experimental work at the Pee Dee Experiment Station has shown that peanut seed may be shelled several months before planting without deterioration in quality. The results of this work are summarized in Table 3. Peanut seed shelled as early as December gave practically the same germination and yield as that shelled just prior to planting.

TABLE 3.—*Average germination (per cent) and yield (pounds per acre) in 1922, 1923, and 1924 of seven varieties of peanuts from seed shelled on different dates*

Variety	December shelling		January shelling		February shelling		March shelling		April shelling		May shelling	
	Germination [1]	Yield [2]	Germination [1]	Yield [2]	Germination	Yield [1]	Germination	Yield [1]	Germination	Yield [1]	Germination	Yield [1]
Jumbo	87.07	855	82.91	990	78.26	956.2	81.75	900.0	77.41	1,642.5	78.38	1,046.2
Virginia Bunch	88.89	855	90.97	540	87.07	1,125.0	72.24	1,001.2	86.62	1,530.0	78.90	1,260.0
Virginia Runner	94.16	585	92.63	855	85.66	1,372.5	75.02	1,260.0	85.22	1,395.0	85.57	1,075.0
African	93.05	675	91.67	855	86.21	1,035.0	77.76	922.5	78.67	978.5	83.33	1,237.5
Valencia	92.08	360	93.19	495	88.71	776.2	76.15	630.0	75.32	652.5	87.09	810.0
Spanish	93.16	900	95.55	900	91.96	877.5	86.62	911.2	87.26	900.0	92.62	843.5
Improved Spanish	90.41	1,125	91.24	1,125	92.10	1,327.5	78.58	1,023.5	81.23	1,057.5	85.37	1,023.5

[1] 2 years only. [2] 1 year only.

The utmost care should be observed to avoid injury to the seed when shelling. Breaking of the inner or red skins of the kernels will seriously affect germination. This seems to be especially true when seed is shelled several months before planting. Irrespective of the time of shelling, it is best to shell either by hand or by some type of machine that will not damage the kernels. Peanut shellers are available which will do the work without much damage to the seed, but it is always necessary to hand pick the seed after shelling by machine.

PLANTING

TIME OF PLANTING

Throughout the greater part of the commercial peanut area the planting of the main crop is done between April 10 and May 10, but in no case should the seed be planted until the soil is reasonably warm. The large varieties require a longer period for their development than do those of the Spanish type. Best results are secured from early planting, but in the Gulf coast region Spanish peanuts may be planted as late as July 1 and a fairly good yield obtained. When large acreages are grown, plantings should extend over a period of at least three or four weeks, so that the entire crop will not be ready for harvesting at one time.

PREPARATION OF LAND FOR PLANTING

If the land has been well fitted and leveled, the rows at planting time may be laid off with a 1-horse marker. The fertilizer is then distributed, as described on page 4, and the peanut planter run along the same marks. A planting gang, consisting of a team attached to the harrow, a 1-horse marker, two fertilizer drills, and two peanut planters will plant 10 to 12 acres a day. On a small scale two men with a double team can work to advantage. First, a section of the field is dragged or harrowed; the team is then split, one horse being used to mark the rows and sow the fertilizer, while the other is employed to draw the peanut planter. From 4 to 5 acres a day may be planted in this manner.

PLANTING DISTANCES AND QUANTITY OF SEED

Planting distances depend upon the kind of tools used, the fertility of the soil, and the variety grown. Such varieties as the Spanish, Improved Spanish, Valencia, and Tennessee White, which have medium-sized upright plants, may be planted much closer than Virginia Runner and African, which have large spreading plants. Spanish and similar sorts are often planted in rows 24 inches apart, whereas the larger sorts are sometimes planted in 42-inch rows. Thirty-inch rows for small-top kinds and 36-inch rows for large-top kinds are usually satisfactory. Experiments at the Pee Dee Experiment Station show that on the light sandy loam soils of that region the highest yields were secured where the seeds of both the Spanish and Virginia Bunch varieties were dropped very closely in the row, the best yields being obtained at a distance of 3 inches with the rows 30 inches apart. Practical growers in the southern Georgia peanut area recommend 24-inch rows with 4-inch spacing of shelled Spanish seed. Whether these distances would hold good on the rich river-bottom lands in certain parts of the South is a question, but there can be no doubt that under most conditions a better stand and a higher yield will be secured by closer planting.

The use of shelled seed makes it possible to plant more uniformly, but shelled seed should not be planted until soil conditions are favorable, as otherwise it might rot. The tendency, however, is more and more to the use of shelled seed. Unshelled seed may be soaked overnight to hasten germination. Shelled seed, however, should never

be soaked, as such treatment injures the skins and interferes with germination.

A good grade of Virginia-type peanuts will count about 1,000 or even as low as 500 seeds to the pound and Spanish and others of the small types about 1,500 to 1,000 seeds, usually about 1,250 to the pound. By counting the number of rows per acre and by knowing the spacing of the peanuts in the row it is an easy matter to determine the theoretical quantity of seed needed. Plenty of extra seed should always be provided, not only for the original planting but for replanting in case of failure to secure a stand. The number of pounds of seed given in Table 4 varies according to size of seed between the limits stated. Allowance should be made for seed larger or smaller than the sizes given and to provide a surplus for replanting.

Well-cleaned, unshelled peanuts of a good grade are about 70 per cent kernels, 4 to 5 per cent of which will be small. If planting unshelled seed, therefore, provision should be made for at least one-third more seed by weight.

TABLE 4.—*Approximate quantity of shelled peanut seed needed to plant 1 acre*

Variety	Spacing of seeds in row	Quantity of seeds required when planted in rows of the width indicated		
		24 inches	30 inches	36 inches
	Inches	*Pounds*	*Pounds*	*Pounds*
Spanish and other small sorts with 1,500 to 1,000 seeds to a pound	3	55–85	46–69	37–56
	4	43–65	35–52	28–42
	6	29–43	23–34	15–28
	8	22–33	17–26	14–21
Virginia and other large sorts with 1,000 to 500 seeds to a pound	4	65–130	52–104	42–84
	6	43–86	35–70	28–56
	8	33–66	26–52	21–42
	10	25–50	20–40	16–32

HAND AND MACHINE PLANTING

When planting seed by hand, a small furrow is opened with a single-shovel plow, the seed being dropped and covered with a 1-horse cultivator or with a hand hoe. A notched board attached to the back of the cultivator will form a slight ridge of soil directly over the row.

Peanut seed should be covered to a depth of 1½ to 2 inches on light sandy soils and 1 to 1½ inches on the heavier soils. If the soil contains plenty of moisture, the depth should be less than if moderately dry. Slight firming of the soil over the seed is desirable, and the modern planting machines are fitted with a concave wheel that follows the covering blades and slightly rolls or firms the soil.

Much depends upon the care taken by the operator of the planting machine, to see that it is dropping and covering properly. Some of the machines on the market are fitted with agitators, which keep the peanuts from packing together in the hopper. Plenty of seed should be kept in the machine, and any remaining stems or trash should be removed frequently in order to prevent clogging. A peanut planter is shown in Figure 3.

PROTECTION FROM BIRDS AND RODENTS AFTER PLANTING

In sections where crows, pigeons, salamanders, squirrels, or other pests destroy the peanut seed after planting, it should first be spread upon the floor or on a wagon sheet, sprinkled with a mixture of equal parts of pine tar and kerosene, and stirred to distribute the mixture uniformly. It is neither necessary nor desirable that the material cover the entire pod or kernel, as a little will be effective. This treatment may be used for both shelled and unshelled seed, but great care should be exercised to avoid injury to shelled seed while handling.

CULTIVATION

Cultivation of the peanut crop should begin as soon as the rows can be followed and should continue until the vines occupy the greater portion of the ground. Frequent shallow cultivation, similar to that given beans and peas, is the keynote of success in the production of a peanut crop. As soon as the soil is reasonably dry after heavy rains the surface should be stirred, and during dry weather a soil or dust mulch will help to conserve moisture. In some sections of Virginia and North Carolina, on the sandy loam soils that are free from trash, the peanuts are harrowed carefully about a week after they are up, using a light spike-tooth harrow with the teeth set sloping back. At least one hand hoeing will be necessary, and the best time to do it is usually about the time the plants begin to spread, or following the third cultivation. About five cultivations are required; however, the number will depend entirely upon weather conditions.

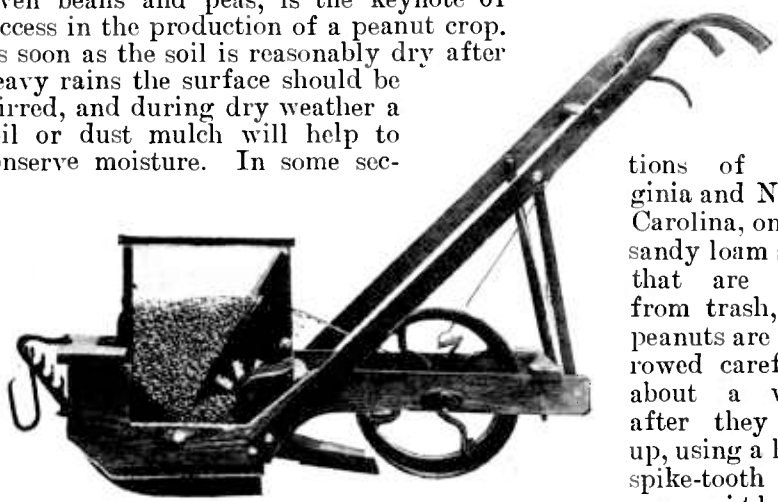

FIGURE 3.—A 1-horse peanut planter

IMPLEMENTS FOR CULTIVATION

In most sections of the South sweeps and 5-tooth cultivators are already on the farms. Of the two the 5-tooth cultivator is preferable, especially if provided with two or three sizes of shovels. The first one or two cultivations should be with the 1¼-inch or narrow shovels, and subsequent workings with the 2½ or 3 inch shovels or points. (Fig. 4.) By working the soil toward the rows during cultivation a broad, flat bed of earth will be formed, leaving a water furrow between the rows.

On light sandy soils, such as are found in many sections of the peanut territory, the greater part of the work of cultivation can

be done by means of a 1-horse weeder of the special type shown in Figure 5. This tool is light and can be dragged diagonally across the rows, first in one direction and then in the other, without serious injury to the plants. At the station at Florence, S. C., it has been found that practically no hand hoeing is necessary where the crop is worked about twice a week with this type of tool until the "pegs" begin to form. After the pegs begin to take hold of the soil a riding cultivator may be used between the rows. A small tooth should be placed next to the row and so adjusted that it will not go more than 2 inches into the soil. Next to this there should be a large tooth and a sweep in the center of the row. The vines must not under any circumstances be disturbed after they begin to "peg down," and only the middles should be cultivated after the pods begin to form. (Fig. 6.)

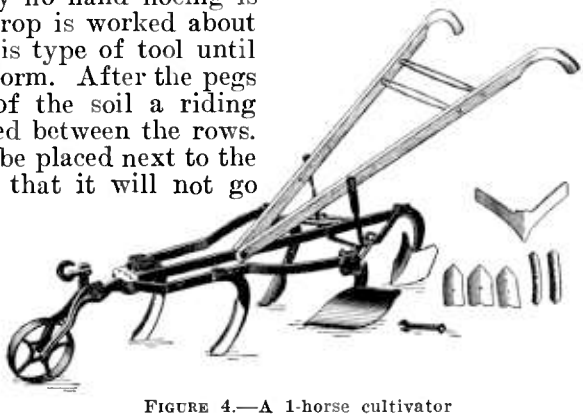

FIGURE 4.—A 1-horse cultivator

After the pegs or pods begin to form they should not be disturbed, but a narrow cultivator or sweep should be used to keep the middles clean and work a little loose soil under the sides of the

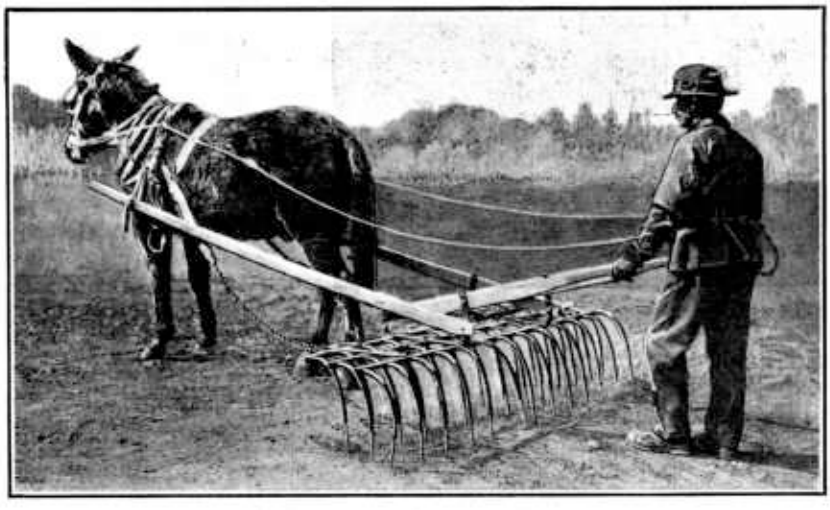

FIGURE 5.—Type of weeder often used for the first cultivation of peanuts

plants, thus providing a bed of fine earth in which later pods may form.

SPECIAL CULTURAL PRACTICES

Shoveling soil upon the center of the peanut plants injures the quality of the hay, and it is doubtful whether a greater number of

pods are formed. Running a light roller over the plants after the final cultivation to flatten the stems upon the ground and enable the little pegs to reach the soil may be desirable in the case of the spreading varieties, but it is a questionable practice with the Spanish or any of the erect-growing types.

The primary object should be to so cultivate the crop that the largest possible number of perfect pods will set and mature at the same time, yielding a uniform product.

FIGURE 6.—Peanut flower and the pegs that form pods

ENEMIES OF THE PEANUT

The peanut in the United States has been very free from injury during growth by insects and diseases. Several serious diseases exist in foreign countries, and there is grave danger that these may gain a foothold here. Appreciable but undetermined losses to the crop are being caused by leaf spot (*Cercospora personata*) and root rot (*Sclerotium rolfsii*). For controlling or reducing the injury caused by root rot, which often destroys as much as 10 to 15 per cent of the pods, crop rotation is recommended. A rotation including corn, cowpeas, rye, and clover (but not cotton, sweetpotatoes, potatoes, tomatoes, or cucumbers) should be advantageous and should assist in reducing losses from root rot. No known measures exist for the control of leaf spot.

HARVESTING AND CURING

TIME OF HARVESTING

Peanuts should be harvested before the vines are killed by frost. When to harvest the crop may be determined in two ways: (1) By a slight yellowing of the foliage, and (2) by an examination of the pods. If the peas are full grown and the inside of the shells has begun to color and show darkened veins, it can be assumed that they

are ready for harvesting. The tendency of many farmers has been to dig too early and before most of the peanuts have fully developed. On the other hand, if harvesting is deferred too long the peanuts shed their leaves, and in the case of the Spanish variety many kernels will be lost by sprouting, especially if a rainy period should occur.

FIGURE 7.—Plow type of peanut digger

METHODS OF DIGGING

Peanuts should be loosened from the soil by means of a sharp implement that will cut off the greater portion of the root system on which the nitrogen nodules are borne. A number of diggers of the plow type that do this in a fair manner are on the market; there are also special peanut points to be attached to an ordinary turning plow from which the moldboard has been removed. (Fig. 7.) A very simple and effective type of peanut

FIGURE 8.—A simple and effective peanut digger made by a local blacksmith

digger consists of a sharpened, curved steel bar, which is attached to a Georgia plowstock, as shown in Figure 8.

Regular machine potato diggers with elevators (fig. 9) have been found very satisfactory where the soil is reasonably dry and the

crop is free from grass. These machines not only lift the peanuts from the ground but also shake off the soil, as shown in Figure 10. By regulating the depth of the point, the roots can be cut off just deep enough to avoid loss of the pods, leaving most of the nitrogen-bearing nodules in the soil.

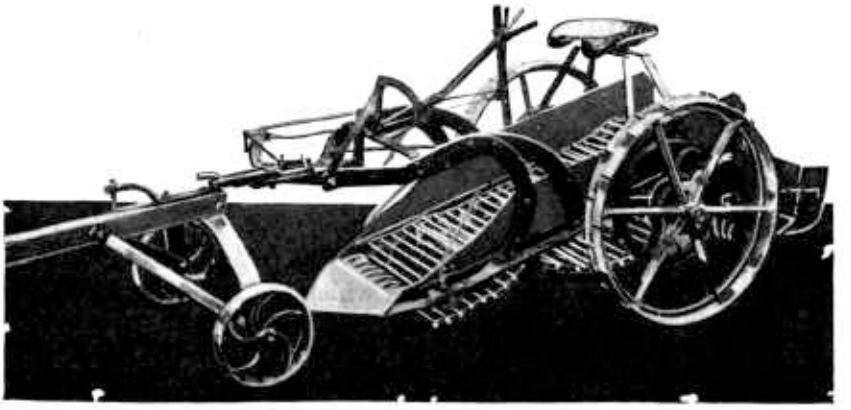

FIGURE 9.—Potato digger used for harvesting peanuts

Digging should not begin in the morning until the vines are dry, and no more should be dug than can be placed in stacks during the day.

CURING

After the peanut vines are loosened and the soil shaken from them they are allowed to lie either spread upon the ground or in small

FIGURE 10.—Potato digger used for digging peanuts

bunches until the leaves are slightly wilted, but not until they become curled or brittle. If the weather is suitable for curing the crop, stacking may begin within an hour or two after digging.

There is but one right way of curing peanuts, and that is by putting them in small stacks around poles to which two crosspieces have been nailed a few inches above the ground. Curing in windrows may succeed about one year out of five in sections having little rainfall at harvesting time, but the farmer who uses this method is always taking a great risk of losing his crop.

Small poles or split stakes 3 to 4 inches in diameter at the base, cut 7 feet in length and sharpened at both ends, are the best type of stake around which to stack peanuts. The crosspieces should be 14 to 18 inches long and may consist of edging strips from the sawmill or short pieces of split timber similar to stove wood. From 15 to 30 stacking poles will be required for an acre, and both poles and crosspieces should be ready for use well in advance of harvesting time. Two crosspieces only are required for each pole, and these are

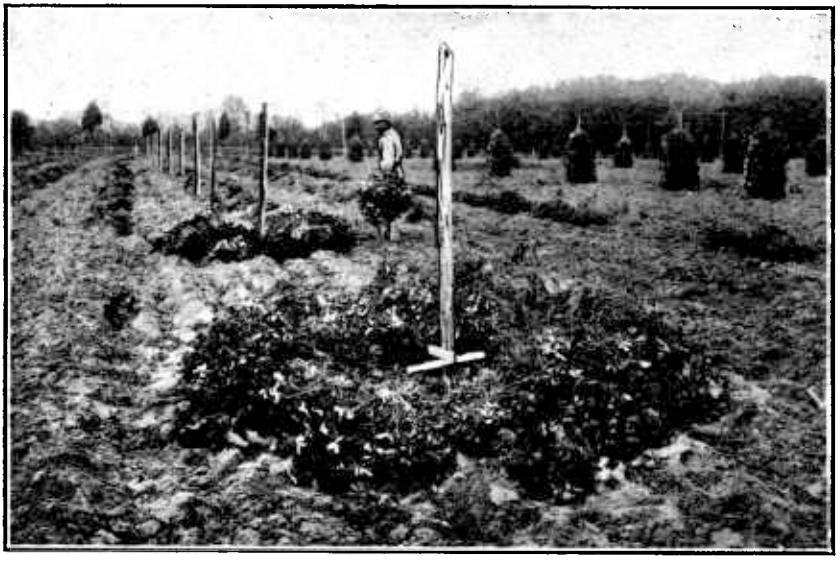

FIGURE 11.—Poles around which stacks of peanuts are to be built

nailed at right angles, one directly above the other, as shown in Figure 11.

Then 12 to 14 rows of peanuts are placed in a stack row. After a sufficient number of rows are dug the stakes are distributed and set by making holes with a post-hole digger, crowbar, or an old wagon axle, inserting the stakes, and tamping the soil firmly around them so that they will not blow over with the weight of the stack upon them. The crosspieces are then nailed on at right angles to each other 8 to 12 inches from the ground.

For assembling the peanut vines around the stacking poles a fork having six or eight tines is the best implement. As the vines are brought together they are laid in a circle on the ground, with the roots toward the pole at a convenient distance from the pole, so that the person doing the stacking can work comfortably. In starting to build the stack a few vines are hung over each of the crosspieces, thus forming a foundation. The stack is built by piling the vines around

FIGURE 12.—Partly completed stack of peanuts, showing the method of placing the vines in stacking. Completed stacks are shown in the background

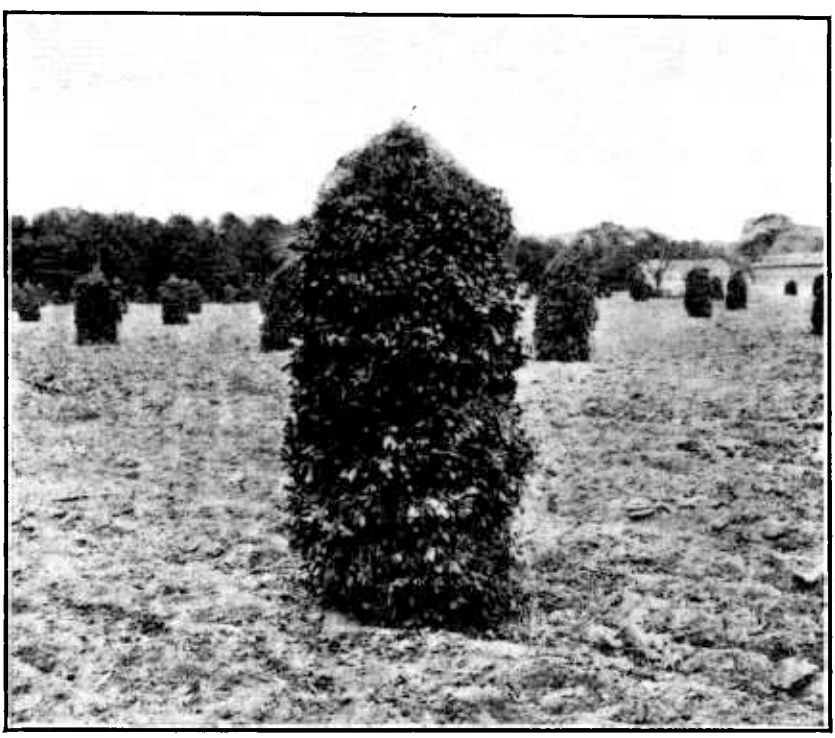

FIGURE 13.—Typical stack of peanuts at the time of completion and before it has settled

the pole by hand, pressing them down, and keeping all the peanuts on the inside next to the pole. (Fig. 12.) Occasionally a bunch should be divided and hung around the pole in order to bind the stack together and to keep the center about 1 foot higher than the outside, so that the stack may shed water. Where the vines are extremely long the center of the stack should be kept high from the start. In order to provide free circulation of air and prevent the possibility of the nuts heating and souring in the stacks, under no circumstances should the stacks be more than 36 to 42 inches in diameter.

As the stack nears completion it should be gradually drawn to a point and a few vines crowded down over the sharpened top of the stake to complete the stack. A little dry grass or weeds may be placed on top of the stack, but too much will have a tendency to prevent circulation of the air through the stack and will interfere with the proper curing of the peanuts. A typical completed stack is shown in Figure 13.

Peanuts are, as a rule, stacked in the field where the crop is grown, but sometimes the vines are hauled to a central point where the stacks are built close together and inclosed with a fence in order that the hogs may be turned into the field to feed on the nuts detached in harvesting.

Peanuts intended for the market should remain in the curing stacks three to six weeks before being picked from the vines. Peanuts cure rather slowly in the stacks, and if picked from the vines too soon the peas have a tendency to shrivel and there is more or less danger of molding or fermenting after picking. Where the peanuts, vines and all, are to be used for stock feed, they should be cured in stacks for at least four weeks before being stored in barns.

PREPARATION FOR MARKET

PICKING

Picking the commercial peanut crop of the United States is done mainly during October, November, and December. Peanuts can be picked satisfactorily only when the vines are dry and brittle, as damp weather causes them to be tough and the pods difficult to detach. If for any reason it is necessary to pick the peanuts when they are damp or before they are fully cured, they should not be stored in large quantities but should be spread thinly on a floor and stirred from time to time until dry. If bagged or stored in bulk before they are fully dry, they will go through a sweating or souring process that renders them unfit for the market or for seed.

Hand picking, as practiced in Virginia and North Carolina in the early days of the peanut industry (fig. 14), is no longer practicable with the commercial crop. A satisfactory peanut-picking machine must remove all of the marketable nuts from the vines with a minimum amount of breakage of the pods. Two types of picking machine are now on the market, one working on the principle of a cylinder grain thresher and the other provided with a wire mesh over which the peanuts are drawn in such a manner that they fall through and are pulled from the vines. The capacity of peanut-picking machines depends upon the make of machine and the condition of the

peanuts, about 250 bushels per day being an average. In addition to removing the pods from the vines, the machines have special facilities for cleaning them and taking off the small stems. (Fig. 15.)

FIGURE 14.—Old-fashioned method of picking peanuts from the vines by hand

In order that no time may be lost by hauling the stacks long distances, the picker is set at a convenient point near the center of the field and in large fields may be moved two or three times to shorten the haul. The entire stack, pole and all, should be brought to the picker, none of the peanuts being wasted by this method, as would be

FIGURE 15.—Peanut picker and crew

the case if the vines were removed from the poles in the field. The poles can be loosened from the ground by means of a handspike thrust underneath the crosspieces. Two men can then easily load the stacks

upon low-wheeled wagons, and during the unloading the poles are drawn out and thrown to one side.

In sections where peanuts are extensively grown, a special 2-wheel cart, as shown in Figure 16, is frequently employed for hauling the stacks to the picker. The cart is backed against a peanut stack, the short chain, attached to the end of the lever, hooked around the top of the stacking pole, and the stack raised free from the ground by drawing down the long end of the lever and securing it under a hook attached to the shaft. The outfit is then driven to the picker, the lever released, and the chain unhooked from the stacking pole. By driving the horse in a trot, an outfit of this kind will move almost as many stacks to the picker as a 2-horse team attached to a wagon with two men to load and unload it. The cart, however, gives best results where the haul is short.

Slow, uniform operation of the picking machine will secure best results as to both quality and quantity of peanuts, and if the vines

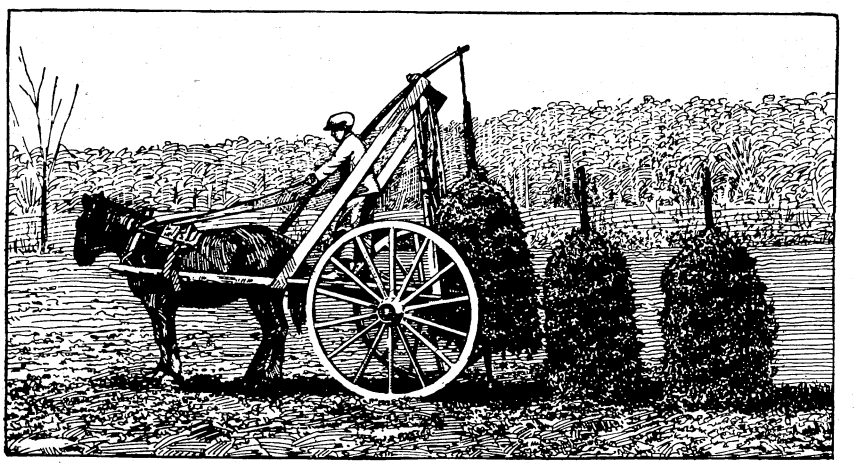

FIGURE 16.—Device used for lifting peanut stacks and moving them to the picker in the field

are either damp or extremely dry the machine will need to be adjusted to suit their condition. The special attachments for recleaning the peanuts as they come from the machine should always be used, even though their use may slow down the work of picking somewhat. Four or five men are required to operate the machine, one to place the peanut vines in small forkfuls upon the feeding table, one to feed them uniformly through the machine by hand, one to handle the peanuts as they are delivered from the machine, one to throw back the hay, and one to attend to the oiling and care of the machine.

BAGGING

Some of the peanut-picking machines have a bagging attachment, and the peanuts go directly into standard peanut bags. These are 32 by 36 inches in size and hold approximately 90 pounds of the Virginia type and 120 pounds of Spanish peanuts. As the bags are filled they are taken from the machine and the opening closed by sewing with a bagging needle and soft twine. The bags are then hauled direct to a barn or storage shed. If on account of shortage of

teams the peanuts can not be hauled to the storage place the same day they are picked, the bags should be piled on a foundation of poles and securely covered with canvas or peanut vines, to protect them for a day or two until they can be hauled.

Peanuts as they come from the picker frequently contain more or less moisture and should be stored so as to permit a free circulation of air. The building in which peanuts are stored should have a good roof, and the bags should be fully protected from rain. The bags should not be piled directly upon the ground or on a tight floor, but poles or 2 by 4 scantling should be placed under them to provide ventilation. Great losses occur in the farm storage of peanuts from the ravages of rats and mice, which not only destroy the nuts but by cutting holes in the bags cause serious losses during subsequent handling. Any storage can be made rat and mouse proof by lining it with woven wire the meshes of which are less than one-half inch.

CLEANING AND GRADING

Sometimes the peanuts are ready to market as they come from the picker, but more often there is more or less rubbish, including broken stems, light pods, roots, sand, and small stones, which must be removed before the peanuts are in condition to market. The grading is accomplished by recleaning, during which the trash and light pods are blown out. The peanuts may be again passed through the picking machine, utilizing the cleaning device. In recleaning, the peanuts may be fed through the picker in a steady stream as fast as they can be handled by the cleaning attachment, a heavy air blast being maintained. After being recleaned they are resacked. Each sack is weighed, and the weight and grade are marked upon it. The peanuts are then ready for marketing.

The United States grades of peanuts, issued by the Bureau of Agricultural Economics of the United States Department of Agriculture, have been adopted by the trade associations in certain of the Southern States, based upon the size and the quantity or percentage of first-class kernels that may be shelled from a given sample. Four grades have been promulgated, as follows: Farmers' stock White Spanish peanuts, Farmers' stock Virginia-type peanuts, shelled White Spanish peanuts, and shelled Runner peanuts.

Too much emphasis can not be placed upon the necessity for careful picking and grading of peanuts, particularly if the grower wishes to make use of the facilities afforded under the United States warehouse act for financing purposes.[1]

VARIETIES FOR THE MARKET

At least 9 or 10 more or less distinct varieties of peanuts are grown in this country, but the varieties known as Virginia Runner, Virginia Bunch, and Jumbo furnish the large-podded peanuts appearing on the markets. According to good authority, the Virginia Runner and Virginia Bunch were originally one variety, and the present varieties are the result of selection. Recently the variety known as Jumbo has developed through selection.

[1] Information relative to the storage of peanuts under the United States warehouse act may be had by addressing the Bureau of Agricultural Economics, United States Department of Agriculture, Washington, D. C.

The Spanish variety, including the White (or true) Spanish, several strains of Improved Spanish, and one or two strains of Small Spanish, is used mainly for shelling and for the manufacture of peanut oil. Large quantities of the large-podded varieties, however, are shelled and enter the shelled-goods market.

In addition to those mentioned above there are several varieties and strains, mainly of local importance, including African, North Carolina or Wilmington, Tennessee White Skin, Tennessee Red Skin, Valencia, and Georgia Red, the last three having red-skinned peas, which are considered undesirable, especially where mixtures appear in shelled goods of the white varieties.

Virginia Runner has a spreading habit of growth and forms pods both at the base of the plant and along the lateral stems. It is rather difficult to dig without

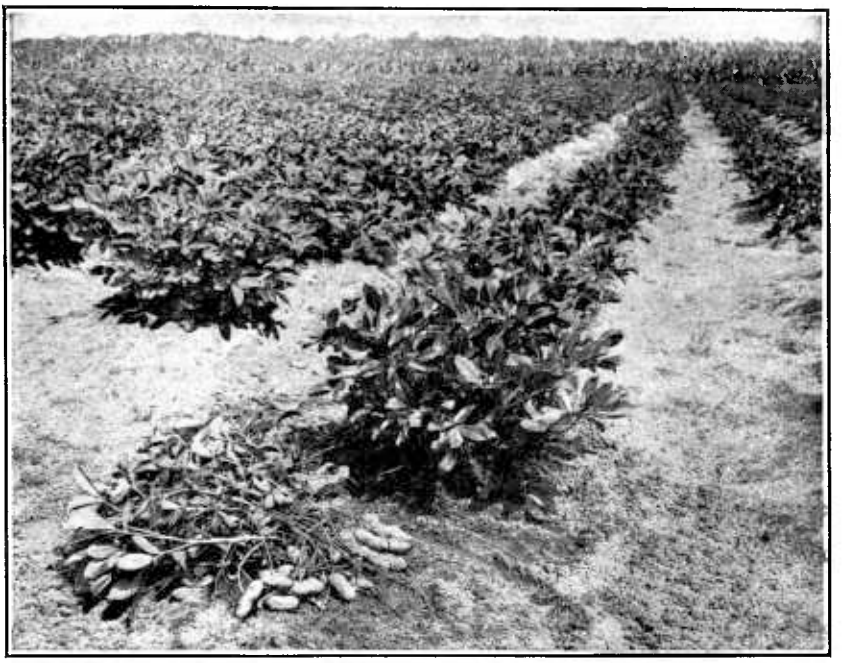

FIGURE 17.—Virginia Bunch peanuts

losing a few of the peanuts and to stack so that the nuts will not be exposed to the weather. This variety is grown extensively in southeastern Virginia and northeastern North Carolina.

Virginia Bunch has an upright or bunch habit of growth, and the pods are formed in a cluster around the base of the plant. (Fig. 17.) It is easy to cultivate and is not difficult to harvest.

Jumbo is a comparatively new variety, with strains of both the runner and the bunch types, having somewhat larger pods and peas than either the typical Virginia Bunch or Virginia Runner varieties.

Spanish is the most important commercial variety in the South, especially outside of the Virginia-North Carolina district. The medium or true White Spanish, as shown in Figure 18, is adapted for all purposes in the South Atlantic and Gulf coast regions. This variety is of an upright habit of growth, has rather heavy foliage, and the pods cluster close about the base of the plants. It is easy to cultivate and to harvest.

Improved Spanish resembles the regular Spanish, but the vines are more vigorous and the pods and peas are larger.

African, sometimes called Alabama Runner, is a low-growing runner pea, requiring a long season for its maturity. It produces a heavy yield of peas, which are fairly high in oil content, but this variety has not found general favor on the market.

North Carolina, or Wilmington, is a runner pea somewhat resembling Virginia Runner, but is of lighter growth and has smaller pods. Certain characteristics indicate that it may be closely related to the variety known as African. Peanuts of the North Carolina variety are used both for shelling and for small-sized vending stock.

Tennessee White Skin belongs to the Valencia type and has long and slender pods with several white-skinned peas in each. It is a rather desirable variety for shelling.

Tennessee Red Skin is similar to Tennessee White Skin except that its peas are red. It is not extensively used for shelling but is sold locally for roasting in the shell.

FIGURE 18.—Spanish peanuts

Valencia has a vigorous upright growth, with the pods clustered about the base of the plants, similar to Spanish. The peas are reddish and not considered desirable for shelling.

Georgia Red, sometimes called Red Spanish, is another variety closely related to Valencia. Its pods are short, usually containing two or three light-red peas.

MARKETING

Peanuts should always be sold by actual weight rather than by the bushel. Considerable confusion arose in the past from the use of the bushel as a measure for handling and selling peanuts. The large-podded Virginia varieties will, as a rule, weigh about 22 pounds, the Spanish 30 pounds, and Runners 28 pounds to the measured bushel, but these weights are not constant and vary with locality, grade, and condition of the stock. If sales are conducted

on the basis of tons or hundredweight and according to standard grades, both buyer and seller will have in mind a definite standard.

Peanut-cleaning factories and oil mills are essential in the preparation of the peanut and its products for the retail market. As the many and varied uses developed for peanuts require intricate and expensive machinery, this work can not be done to advantage on the farm. Therefore, when the farmer has recleaned and graded his crop and delivered it to the shipping point or to the factory in the best possible condition, his connection with the work ends.

PEANUTS AND BY-PRODUCTS AS STOCK FEED

Peanuts are exceptional among southern farm crops in that every part of the plant and all by-products resulting from the factory processes through which peanuts pass can be utilized to good advantage, mainly for stock feeding. Peanut hay and the light or inferior pods constitute the by-products on the farm; hulls, press cake, and meal result from the manufacture of peanut oil; hulls, shrunken and inferior kernels, germs, and fine particles of meats are by-products of the cleaning factories; and considerable quantities of germs, red skins, and inferior particles of meats result from the manufacture of peanut butter and confections.

Peanut hay, or the vines from which the pods have been removed, was at one time allowed to go to waste, but now has considerable market value and hundreds of carloads are sold. Although it does not contain as much protein as alfalfa, clover, cowpea, or soybean hay, it may be used where a legume hay is desirable. It is considerably better than stovers and grass hays as a source of protein. Where the vines are properly cured in stacks, the hay will come from the picker with a bright color. Sufficient attention has not been given by the manufacturers of peanut-picking machinery to providing proper attachments for handling and cleaning the hay. If these machines were provided with better facilities for separating the dirt from the hay, less difficulty would be experienced in feeding it. By proper manipulation of the picking machines now in use much of the sand and dust can be separated from the hay and its value increased. As a rule a baling machine is employed either in conjunction with the picker or following behind and packing the peanut hay into bales. Care must be taken in baling to mix the leaves and stems so that the product will be uniform. Peanut hay should be baled when dry and the bales stored where they will not be exposed to the weather.

Moldy peanut hay is unfit for feeding purposes, but hay that has been properly cared for may be fed to all kinds of livestock. In feeding to mules and horses it should be fed in racks or wire-bottom mangers, in order that any sand or dust may sift through. Cases are on record where both horses and mules have been injured by feeding either moldy or extremely dusty peanut hay, the symptoms frequently being similar to those of ordinary colic.

All light or inferior peanuts removed in recleaning and grading may be used for feeding hogs on the farm, or they may be ground, shells and all, mixed with other ingredients, and used as dairy, poultry, or hog feed.

With the establishment of the peanut-oil industry in the Southern States a line of practically new by-products has appeared upon the market, peanut cake and peanut meal being the most important. In the production of the highest grade virgin peanut oil abroad the nuts are shelled and hand picked just the same as for the confectioners' trade, and the press cake resulting is of a very high grade. Where the nuts are crushed, shells and all, a lower-grade cake and meal results, but even this makes a highly concentrated feed. When fed to dairy animals peanut meal does not give the milk any peculiar flavor, and it can be fed continuously to hogs without any injurious effects except a slight softening of the flesh. Peanut meal made from shelled nuts is more desirable for hog feeding than that which includes the shells.

Both peanut meal and the shells resulting from cleaning peanuts for oil making find a ready use in the manufacture of mixed dairy feeds. The ground peanut hulls are also used for polishing tin plate. The greater part of the shells, however, are still used as fuel in the boilers of the cleaning plants.

In feeding pure peanut meal, reasonable precaution should be taken as regards the quantity fed, on account of its high protein content. The safest plan is to mix it with other feeds, forming a balanced ration.

Formerly the greatest use for peanuts in the Gulf coast region was for feeding to livestock on the farms. The production of peanuts for the market in that section has been a transition from the stock-feeding phase. While there may be disadvantages connected with the feeding of peanuts to hogs, the fact remains that they are one of the most important hog feeds on southern farms.

There is no doubt that peanuts have a pronounced softening effect upon the carcasses of hogs. Numerous experiments have been conducted by the United States Department of Agriculture in cooperation with State experiment stations to determine the extent to which this effect can be overcome by finishing the hogs on corn and other hardening feeds and also to study other phases of the soft-pork problem. From the results so far available the following facts may be mentioned: (1) There is no means by which the hogs that will kill soft may be detected until the carcasses have been chilled. (2) As a rule, peanut-fed pork will shrink more in the curing and smoking processes than that produced on corn. (3) When a comparison was made of corn and peanuts as basal feeds for fattening hogs, no distinctive differences were found in the desirability of the flavor and aroma of the roasted fresh pork; however, the cured pork produced in part on peanuts is rather commonly believed to have a distinctive flavor. (4) The market discrimination against peanut-fed hogs is based largely upon the oily, unattractive appearance of the fresh cuts, lard, and sausage and the difficulty in selling these products. The poor slicing quality of the bacon is also an important consideration.

Decision as to the use of corn or peanuts in the growing and fattening of hogs on southern farms must rest upon the profit per acre that can be made by each method. While no reliable figure is available, it is estimated that the average discount on peanut-fed hogs when sold is approximately 2 cents a pound on the live-weight basis. In order for pork production on peanuts to be a profitable practice, it must represent an economy sufficient to offset this difference in

market value, in comparison with feeds that produce firm hogs. It should be borne in mind, however, that peanuts are not the only feed that produees soft pork.

Where peanuts are grown exclusively for feeding purposes suecessive plantings should be made; also more than one variety should be used. The Spanish is undoubtedly the best all-round variety for feeding purposes, but has the disadvantage that the seeds are liable to sprout in the ground if wet weather occurs after they are mature. The Georgia Red (sometimes ealled Red Spanish) has the eharacteristic of remaining in the ground without sprouting throughout the autumn, and sometimes until nearly spring, and for that reason it is especially adapted for hog feeding. The variety known as African is also a good hog-feeding sort, as it matures late, produces a large number of pods, and keeps well in the ground.

FIGURE 19.—Peanut growing between rows of corn

Spanish and similar varieties having an upright habit of growth are frequently mowed for hay, after whieh the hogs are turned in to harvest the peanuts. Another method is first to mow the tops for hay, dig and staek the greater part of the peanuts, and then turn in the hogs. Because of their low spreading habit of growth the Virginia Runner, North Carolina, and African are not adapted for handling in this manner. In many parts of the South peanuts are planted between the rows of eorn, as shown in Figure 19.

VALUE AS A MONEY CROP

Too mueh can scarcely be said in favor of the peanut as a money erop for southern farms wherever the eharacter of the soil, the climate, and the loeal conditions are adapted to its production. The

demand for peanuts is increasing as new uses and a wider market are found. In order that the grower may know where he stands as regards profits derived from his crop he should keep a reasonably accurate account of all items of expense entering into its production.

It is assumed that if the cost of growing a single acre is known, the cost for the crop on any given farm may be determined with reasonable accuracy. Local conditions determine to a certain extent the cost of growing peanuts, and actual cost figures can not be given in a publication for use throughout the peanut territory of the United States. The following items are those usually entering into the cost of production:

1. Rental of land or interest on the value of the land.
2. Supervision and overhead costs, including interest on investment in tools, equipment, and storage houses and their repair and upkeep.
3. Fertilizers, lime, or marl.
4. Seeds.
5. Bags and stacking poles.
6. Labor involved in the following operations:
   - *a.* Plowing and fitting the land.
   - *b.* Marking land, spreading fertilizers, and planting seed.
   - *c.* Cultivation.
   - *d.* Hand hoeing.
   - *e.* Digging and stacking.
   - *f.* Picking.
   - *g.* Hauling to market.
7. Miscellaneous expenses, including any preventable losses that occur from the ravages of rats and mice and any discounts or dockages due to peanuts not conforming to represented grade. These do not form a part of the actual growing costs and should be figured rather as losses.

The average yield of peanuts harvested as nuts for the entire United States during the 10-year period 1927–1936, inclusive, was 692 pounds per acre, or approximately 31 bushels per acre if expressed in terms of the large-podded varieties, or about 23 bushels of the Spanish type. This, however, includes a large acreage grown as a secondary crop and where cultural conditions were such that high yields were seldom obtained. The figures for Virginia and North Carolina for the same period averaged between 900 and 1,100 pounds per acre, or about 300 pounds greater than the average for the United States. Under the best conditions, yields of 1,400 to 1,600 pounds are frequently secured.

Definite figures as to the market value of an acre of peanuts change from year to year. If the yield and grade are known, it will be an easy matter to apply current prices and, allowing a reasonable value for the hay and waste products, compute the value of the product of an acre. By deducting the cost of growing, net profits may be obtained.

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